UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15TH Street, Suite 3200
Helena, MT 59626-0096
Phone 866-457-2690
www.epa.gov/region8

Ref: 8MO

February 12, 2018

Mr. Loren Burmeister
Operations Project Manager
Atlantic Richfield Company
317 Anaconda Road
Butte, Montana 59701

Re: Comment letter for Silver Bow Creek/Butte Area NPL Site Butte Priority Soils Operable Unit Request for Change: Monitor Parrot Tailings Construction Project (dated January 16, 2018)

Dear Loren:

The U. S. Environmental Protection Agency (EPA), is providing the following comments and concerns on the *Silver Bow Creek/Butte Area NPL Site Butte Priority Soils Operable Unit Request for Change: Monitor Parrot Tailings Construction Project (dated January 16, 2017)* prepared by Atlantic Richfield. These comments and concerns are as follows:

General Comments

1) This Request for Change (RFC) is a change to the Radon Tracing Work Plan from 2011 (Work Plan). The objective of that Work Plan was "*...to determine quantities and quality of groundwater upwelling along the reach of Blacktail Creek and Silver Bow Creek located between Harrison Avenue and Station SS-07 during the annual low base flow condition.*" It had a definite focus on collection of radon data and calculation of loading to surface water. The RFC primarily involves groundwater monitoring from wells over a period of years with a focus on changes in groundwater direction of flow and quality. The activities have some overlap, but the objectives are significantly different. Therefore, EPA would like to see this RFC as an amendment to an existing approved monitoring plan or submitted separately as a stand-alone Quality Assurance Project Plan (QAPP). In this regard, neither the RFC or Work Plan contained data quality objectives or a QAPP; thus, supplementary comments are provided on the attached EPA Region 8 QA Document Review Crosswalk.

   Since the activities described in the RFC are straightforward and an extension of interim long-term ground water and surface water monitoring occurring at the site and obtaining baseline data are time-sensitive, EPA recommends commencing with data collection using methodology defined in the interim monitoring programs. A work plan for the monitoring described in the RFC should be developed with the necessary DQOs and QAPP as soon as practicable. The work

plan should include the thresholds for additional monitoring (Section 4 of the RFC) as well as proposed analysis of the data to evaluate the objectives in the RFC and any DQOs to be developed for the work plan. Please submit the draft QAPP by March 31, 2018.

2) The proposed monitoring has obvious overlap with the monitoring proposed by the Natural Resource Damage Program (NRDP). Please state whether the purpose of the monitoring is to supplement, duplicate, or be entirely independent of the NRDP monitoring. Under each of the fore mentioned scenarios, EPA would like for AR to be responsible for and take the lead on the design, coordination, procurement of driller, and installation, oversight, and monitoring of the replacement wells in the NRDP's Parrot removal footprint area. EPA believes that this would provide consistent application of well installation procedures and consistent tracking and implementation of long-term sampling and monitoring of the replacement wells in the Parrot removal area.

Specific Comments

1) Title page, DATE - Date of "January 15, 2017" should be "January 15, 2018".

2) Section 3.0, Objectives - The first three objectives listed include "*Detect Changes in Groundwater Conditions*" Please specify as "*groundwater levels and flow direction,*" unless an effort is to be made to measure groundwater flow velocities or other hydrogeologic parameters.

3) Section 3.0, Objective 1, last sentence – How will the baseline and post-construction variability be compared? Will it be a statistical technique? Will values be compared or just the variability? Comparing the variability of two populations hints at a specific statistical technique (for example, F-test). Will means or other statistical parameters be compared? The reason that this is important now is that many statistical techniques have specific requirements in terms of the number of samples and the parameters used.

4) Section 3.0, Objective 2, first sentence – This sentence states that the groundwater parameters within the interior of the capture zone will be "in comparison to historical parameter variability and values". Will this be a different statistic or other technique than for objective 1 where only the variances will be compared?

5) Section 3.0, Objective 2, first sentence following bullet list – Will the identity of the interior wells as "Parrot Tailings groundwater type" be reclassified following construction based on a new multivariate statistical analysis? If so, the parameter list presented in Table 3 will need to be expanded. According to the Draft Final Revised Fingerprinting TM (pgs. 19-20);

> *The chemical differences between water type A (Parrot Core) and A1 (Parrot Periphery) and less impacted water types (e.g., B2, CD2, D, DE1, DE2, and E) are that water types A and A1 have a higher normalized concentration of field specific conductance (SC) (Figure 3-8), iron (Figure 3-10), manganese, cobalt, and cerium, and lower field pH and normalized concentrations of sodium, potassium (Figure 3-10), silica (Figure 3-8), nitrate, barium, molybdenum, and strontium (Figure 3-9)(Appendix A, Section A.3.2.5, Root 1).*

Currently, Table 3 does not include barium, cobalt, cerium, molybdenum, nitrate, silica, or strontium for groundwater.

6) Section 3.0, Objective 2, page 3, last sentence on page - The sentence states; *Groundwater from select monitoring locations will be analyzed for those analytes characteristic of the Parrot Tailings water type (Table 2).* Again, see previous comment relating to the proposed parameter list. Also, it is assumed that "Table 2" should be "Table 3" in this sentence. Please clarify.

7) Section 3.0 - Objective 3 identifies transects and the stated purpose of the transects is to continuously monitor elevation, temperature, and SC; however, Table 2 shows some of these locations to be monitored for level and temperature only, while other locations not included in transects are to be monitored for level, temperature, and SC. Please review Table 2 and correct as necessary to meet Objective 3. In addition, how will the transects be used in support of detecting changes at the capture zone boundary?

8) Section 3.0, Objective 4 - For the same reasons stated for monitoring at C-8.5 TR, it may be useful to also monitor at C-11 TR and C-7.5 TR.

9) Table 3 - In the comment letter on the Parrot Monitoring Program from AR to NRD dated October 6, 2017, it was suggested that field SC, calcium, iron, silica, boron, barium, lithium, uranium, vanadium, and rubidium were useful at differentiating between Parrot tailings water and a dispersed source, however this list was not used in its entirety at any of the monitoring locations. Please clarify how and where this list applies.

If you have any questions or concerns, please call me at (406) 457-5019.

Sincerely,

Nikia Greene
Remedial Project Manager

Attachment: EPA Region 8 QA Document Review Crosswalk

cc: (email only)
Butte File
Jenny Chambers; DEQ
Daryl Reed; DEQ
Jon Morgan; DEQ counsel
Tom Stoops; DEQ
Pat Cunneen; State NRD Program
Jim Ford; State NRD Program
Harley Harris; State NRD Program
Mary Capdeville; NRD Program counsel
Dave Palmer; BSBC

Jon Sesso; BSBC
Mollie Maffei; BSBC
David Schultz; BSBC
Eric Hassler; BSBC
Brandon Warner; BSBC
Karen Sullivan; BSBC
Julia Crain; BSBC
Gordon Hart; BSBC counsel
Anne Walsh; UP
Robert Bylsma; UP counsel
John Gilmour, UP counsel
Leo Berry; BNSF and UP counsel
Yueh Chuang; BNSF
Brooke Kuhl; BNSF counsel
Lauren Knickrehm; Kennedy Jenks for BNSF and UP
Bob Andreoli; Patroit/RARUS
R. Schellig; counsel for Patriot/RARUS
Becky Summerville; Ddmllaw for Inland Properties Inc.
Dawn Maack; Dmllaw for Inland Properties Inc.
Robert Lowry, BNSF counsel
John Ashworth, BNSF counsel
Cord Harris; AR/BP
Loren Burmeister; AR/BP
Jean Martin; Counsel AR/BP
William Duffy; attorney for AR/BP
Pat Sampson; Pioneer for AR/BP
Craig Deeney; TREC
Scott Bradshaw; TREC
Mike Borduin; Pioneer for AR/BP
Brad Archibald; Pioneer for AR/BP
Don Booth; AR consultant
Ted Duaime; MBMG
Gary Icopini; MBMG
David Shanight, CDM Smith
Curt Coover, CDM Smith
Chapin Storrar; CDM Smith
Henry Elsen, EPA
Jim Freeman, US DOJ
Joe Vranka; EPA
Jean Belille; EPA
Janice Hogan; CTEC